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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,556	07/11/2003	Carl M. Mahabir	202TR008A	5165
37535	7590	05/08/2006	EXAMINER	
NOVEON IP HOLDINGS CORP. 9911 BRECKSVILLE ROAD CLEVELAND, OH 44141-3247			HOOK, JAMES F	
			ART UNIT	PAPER NUMBER
			3754	

DATE MAILED: 05/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/618,556

Applicant(s)

MAHABIR ET AL.

Examiner

James F. Hook

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 18, 19, 24, and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Danekas (GB 2,170,206). The patent to Danekas discloses the recited crosslinked polyethylene composition (PEX) which inherently would have improved resistance to oxidation and UV light due to the discussion of UV resistance and inclusion of anti oxidant, where the PEX is provided with 1.5-15% carbon black by weight of the polymer composition, where the PEX is crosslinked using a silane grafting method, and where antioxidants can be to the composition as well, where the amount of carbon black can be adjusted depending upon the environment in which the tube is to be used.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18-20, 24, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Palmlof in view of Danekas (GB 2,170, 206). The patent to Palmlof

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discloses the recited crosslinked polyethylene composition (PEX) which inherently would have improved resistance to oxidation and UV light due to having the same limitations of applicants material in absence of any claimed additional structure to achieve these results, where the PEX is provided with 1-5% carbon black by weigh of the polymer composition, the carbon black used can be furnace black, channel black, and others, where the PEX is crosslinked using a peroxide, and where antioxidants can be to the composition as well. The patent to Palmlof discloses using peroxide to crosslink the PEX but fails to disclose using a silane grafting method. The patent to Danekas discloses using a silane grafting method for crosslinking PEX utilizing peroxide. It would have been obvious to crosslink the PEX in Palmlof using any method such as silane grafting method as set forth in Danekas where such is an equivalent manner to crosslink PEX utilizing peroxide and such would provide efficient production of cross linked materials thereby saving production costs.

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Palmlof in view of Behr. The patent to Palmlof discloses all of the recited structure above with the exception of disclosing the size of the particles of carbon black used, and the thickness of the PEX layer. It is considered an obvious choice of mechanical expedients to form the PEX layer of any thickness required by the environment in which the tube is to be used as such would only require routine experimentation to arrive at optimum values, and it would have been obvious to one skilled in the art to use routine experimentation to arrive at the optimum thickness of the PEX layer in Palmlof as such

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is merely a choice of mechanical expedients. The patent to Behr discloses that it is known in the art to utilize carbon black in a PEX composition where the carbon blacks used can be furnace blacks and channel blacks having grain sizes of 100-1,000 Å which converts to 10-100 nm. It would have been obvious to one skilled in the art to modify the carbon black in Palmlof to be of a size which can be less than 20 nm as suggested by Behr, where Behr sets forth that furnace black and channel blacks used in PEX can be formed of particles in this range, thereby setting forth the size of these known carbon blacks used in PEX layers which would insure proper crosslinking of the PEX thereby preventing premature failure and saving money.

Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Palmlof in view of Behr as applied to claims 1-4 above, and further in view of Danekas. The patent to Palmlof discloses using peroxide to crosslink the PEX but fails to disclose using a silane grafting method. The patent to Danekas discloses using a silane grafting method for crosslinking PEX utilizing peroxide. It would have been obvious to crosslink the PEX in Palmlof as modified using any method such as silane grafting method as set forth in Danekas where such is an equivalent manner to crosslink PEX utilizing peroxide and such would provide efficient production of cross linked materials thereby saving production costs.

Claims 1-3, 9, 10, and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Danekas (GB '206) in view of Behr. The patent to Danekas discloses all of the recited structure above with the exception of disclosing the size of the particles of carbon black used, and the thickness of the PEX layer. It is considered an obvious

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choice of mechanical expedients to form the PEX layer of any thickness required by the environment in which the tube is to be used as such would only require routine experimentation to arrive at optimum values, and it would have been obvious to one skilled in the art to use routine experimentation to arrive at the optimum thickness of the PEX layer in Danekas as such is merely a choice of mechanical expedients. The patent to Behr discloses that it is known in the art to utilize carbon black in a PEX composition where the carbon blacks used can be furnace blacks and channel blacks having grain sizes of 100-1,000 Å which converts to 10-100 nm. It would have been obvious to one skilled in the art to modify the carbon black in Danekas to be of a size which can be less than 20 nm as suggested by Behr, where Behr sets forth that furnace black and channel blacks used in PEX can be formed of particles in this range, thereby setting forth the size of these known carbon blacks used in PEX layers which would insure proper crosslinking of the PEX thereby preventing premature failure and saving money.

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kosewicz in view of Behr and Palmlof. The patent to Kosewicz discloses the recited pipe comprised of a layer of PEX which is provided with carbon black, and an inner liner of uncrosslinked polyethylene (PE) where based upon the discussion of the PE layer blocking peroxides from the PEX layer is stating therefore that the PEX layer is crosslinked using peroxide. The patent to Kosewicz discloses all of the recited structure with the exception of stating the amount of carbon black used in the PEX, the thickness of the PEX layer, and the size of the carbon black particles used. The patents to Behr and Palmlof disclose the structure set forth above. It would have been obvious to one

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skilled in the art to modify the carbon black in Kosewicz to be of a size which can be less than 20 nm as suggested by Behr, where Behr sets forth that carbon blacks used in PEX can be formed of particles in this range, thereby setting forth the size of these known carbon blacks used in PEX layers which would insure proper crosslinking of the PEX thereby preventing premature failure and saving money. It would have been obvious to modify the PEX in Kosewicz by supplying a specific amount of carbon black specifically 1-5% carbon black which teaches a range extending below 2%, as suggested by Palmlof where such would insure a proper amount of carbon black in PEX layers utilized in forming multilayer tubes where such would prevent premature failure of the material and would thereby save money. It is considered an obvious choice of mechanical expedients to form the PEX layer of any thickness required by the environment in which the tube is to be used as such would only require routine experimentation to arrive at optimum values, and it would have been obvious to one skilled in the art to use routine experimentation to arrive at the optimum thickness of the PEX layer in Kosewicz as such is merely a choice of mechanical expedients.

Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kosewicz in view of Behr and Palmlof as applied to claims 1-4 above, and further in view of Stine. The patent to Kosewicz as modified discloses all of the recited structure with the exception of forming the inner liner of a specific type of PE, however, the use of HDPE is considered a known type of polyethylene used in the art for making PEX layers as suggested by Palmlof, and Kosewicz is teaching forming the uncrosslinked liner of the same PE material as the PEX layer, therefore it would have been obvious to one

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skilled in the art based upon this teaching to form the liner layer of Kosewicz of a HDPE material the PEX from a base HDPE material as well as suggested by Palmlof where the thicknesses are considered obvious choices of mechanical expedients requiring only routine experimentation to arrive at optimum values. The patent to Stine discloses that it is old and well known in the art to form inner liner layers of uncrosslinked PE's including a chlorinated polyethylene (CPE). It would have been obvious to one skilled in the art to modify the liner PE layer of Kosewicz as modified to be formed of CPE as such is a known equivalent type of PE used in a non crosslinked layer of a multilayer hose having a crosslinked layer as well as suggested by Stine where such teaches equivalent types of PE used for liner layers where such would be chosen based upon the environment the tube is to be used which would prevent premature failure of the layer and thereby save money. The use of any thickness or density material is considered to be merely choices of mechanical expedients where only routine experimentation is required to find optimum working values for a specific application.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kosewicz in view of Behr and Palmlof as applied to claims 1-4 above, and further in view of Skarelius and Harris. The patent to Kosewicz as modified discloses all of the recited structure with the exception of providing an extra layer of PEX and using a SIOPLAS method to crosslink the PEX, and color coding the hose. The patent to Harris discloses that it is old and well known in the art to color code tubes to identify what flows through them. It would have been obvious to one skilled in the art to color code the tubes of Kosewicz as modified to be of any color to identify the fluid flowing therein as

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suggested by Harris where such is an obvious choice of mechanical expedients and would enhance the use of the tubes by allowing for the identification of fluids therein. The patent to Skarelius discloses that it is known in the art to utilize a SIOPLAS method of crosslinking PEX utilizing silane and/or peroxide, and where additional layers can be provided including an oxygen barrier and other layers of PEX where melt bonding can be used to connect layers. It would have been obvious to one skilled in the art to modify the PEX in Kosewicz as modified to be crosslinked using a SIOPLAS method utilizing silane as well as peroxide to crosslink the layer and to provide another layer of PEX melt bonded together as suggested by Skarelius, which sets forth that the SIOPLAS method of using silane and/or peroxide can be used to crosslink PEX utilized in multilayer conduits where such provides an improved crosslinked material and providing the PEX cover layer would protect the inner layers, which would save money in replacement costs due to premature failure.

Claims 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kosewicz in view of Palmlof and Skarelius and Harris. The patent to Kosewicz discloses all of the recited structure with the exception of thicknesses of layers and densities of materials, gel level, providing an outer layer of PEX with no carbon black, using HDPE as the PE used for the liner, providing an oxygen barrier layer, suggesting how much carbon black is used in the PEX layer loaded with carbon black, and color coding. The thickness, and density of the materials used are all considered to be choices of mechanical expedients where one skilled in the art would only require routine experimentation to arrive at optimum values for use in specific environments and it

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would have been obvious to one skilled in the art to use routine experimentation to arrive at optimum values as such is a choice of mechanical expedients. It would have been obvious to modify the PEX in Kosewicz by supplying a specific amount of carbon black specifically 1-5% carbon black which teaches a range extending below 2%, and to form the PE of HDPE to form the layers where such is a known PE used to form a PEX layer as suggested by Palmlof where such would insure a proper amount of carbon black in PEX layers utilized in forming multilayer tubes where such would prevent premature failure of the material and would thereby save money. It would have been obvious to one skilled in the art to modify the hose in Kosewicz by providing an oxygen barrier to further help prevent oxides from permeating the layers, and to provide another layer of PEX outside of the layers to protect the inner layers as suggested by Skarelius where such would prevent premature failure of the tube thereby saving money in replacement costs, and undesirable oxides from permeating the layers. The patent to Harris discloses that it is old and well known in the art to color code tubes to identify what flows through them. It would have been obvious to one skilled in the art to color code the tubes of Kosewicz as modified to be of any color to identify the fluid flowing therein as suggested by Harris where such is an obvious choice of mechanical expedients and would enhance the use of the tubes by allowing for the identification of fluids therein.

Response to Arguments

Applicant's arguments filed February 10, 2006 have been fully considered but they are not persuasive. With respect to arguments directed toward the color coding

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issues, such are moot in view of the new rejection above. The remaining arguments are centered around the teachings of Palmlof which is moot in regards to the claims amended to remove the positive recitation of peroxide cross linking, however, with respect to the arguments of unexpected results, Palmlof also tested the situation with no carbon black therefore there is a teaching of utilizing no carbon black which also falls below the 2% range claimed, and also with the overlapping range of 1-5% the results are comparable to what one skilled in the art would have expected therefore not setting forth unexpected results. Such is also only supported by a few facts set forth in the specification and may be further supported with additional information such as an affidavit in a future response which may better set forth the instance of unexpected results however at this time it is not clear that would necessarily overcome the art of record.

Conclusion

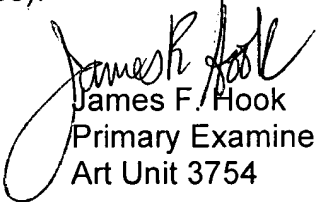
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The references to Wells disclosing state of the art multilayer tubes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James F. Hook whose telephone number is (571) 272-4903. The examiner can normally be reached on Monday to Wednesday, work at home Thursdays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Shaver can be reached on (571) 272-4720. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


James F. Hook
Primary Examiner
Art Unit 3754

JFH